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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,319	07/10/2003	Kevin P. Klubek	85143RLO	2823

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EXAMINER

GARRETT, DAWN L

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,319

Applicant(s)

KLUBEK ET AL.

Examiner

Dawn Garrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 11-24 is/are rejected.
- 7) ☒ Claim(s) 3-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-10-2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (JP 2000-260565). It is noted that claim 1 has been interpreted such that the layer between the cathode and anode comprising a dihydrophenazine compound may also be the light emitting layer that is between the anode and cathode. Takahashi et al. discloses electroluminescent devices with dihydrophenazine-containing compounds in a luminescent layer. In Example 1, Takahashi discloses a device with a luminous layer comprising the dihydrophenazine compound number 8 in combination with dopant DPVBi (see par. 27). The luminous layer is not directly adjacent the anode, because a hole injecting layer and hole transporting layer are formed between the anode and the luminous layer per instant claim 12 (see example 1). Example 3 discloses compound number 8 (the dihydrophenazine compound) may form the hole impregnating (injecting) layer directly adjacent the anode and that a hole transportation layer is formed on the other side of the hole impregnating (injecting) layer followed by a Alq₃ luminous layer per instant claims 11 and 13 (see par. 40). Per instant claim 14, example 1 discloses a device comprising a hole transporting layer between the anode and the luminous layer (see par. 27). The hole transportation layer of example 1 is formed from alpha-

NPD, which reads upon the formula shown in claim 15. The hole transportation layer of example 1 is directly adjacent the luminous layer per instant claim 16.

3. Claims 1, 2, 12-16, and 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueno et al. (JP 2000-021574). Ueno et al. discloses a light emitting layer comprising compound "1-6", which is a dihydrophenazine compound, and Alq₃ in a device further comprising an ITO anode, a TPD hole transport layer, and an aluminum cathode (see example 1, par. 66) per instant claims 1, 2, 12, 14, 15, 16, 19, 21, 22, and 23. Hole transporting compound TPD reads upon the compound shown in claim 15. Paragraph 63 describes a different device embodiment where the dibenzophenazine compound "1-8" comprises a hole transporting layer that is directly adjacent the anode per instant claims 11 and 18. Paragraph 63 also describes the hole transport layer comprising compound "1-8" is adjacent an electron transport layer comprising Alq₃ per instant claims 13 and 20.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. (JP 2000-021574) in view of Iechi et al. (US 2004/0004215). Ueno et al. is relied upon as set forth above. Ueno et al. discloses a TPD hole transport layer (see example 1, par. 66), but fails to specifically teach other diamines for the hole transport layer such as the ones listed in claims 17 and 24. Iechi et al., the secondary reference, teaches NPB (listed in claims 17 and 24) is an

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equivalent charge transporting material to TPD. It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected NPB in place of TPD for the hole transporting material in the Ueno et al. device, because one would have expected the NPB to perform as a charge transporting material according to the teachings of Iechi et al.

Allowable Subject Matter

6. Claims 3-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The compounds set forth in claims 3-8 are allowable as components of a light emitting device as claimed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is 571-272-1523. The examiner can normally be reached Monday through Friday during normal business hours. Please allow the examiner twenty-four hours to return your call.

If reasonable attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached at 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DAWN GARRETT
EXAMINER
ART UNIT 1774

D.G.

April 29, 2004